

CLAIMS LISTING

1. (Currently amended) A peptide that selectively binds to colon cancer cells wherein said peptide has the formula: A-X1-X2-X3-X4-X5-X6-X7-X8-X9-B, and wherein the sequence X6-X8 is arg-pro-met.

2. (Original) The peptide according to claim 1 wherein said peptide is a cyclic peptide.

3. (Original) The peptide according to claim 2 wherein said peptide comprises at least two cysteine amino acid residues, and wherein said peptide is cyclized via a disulfide bond between said two cysteine amino acid residues.

~~4. (Currently amended) The peptide according to claim 1, wherein said peptide has the formula:~~

~~A-X1-X2-X3-X4-X5-X6-X7-X8-X9-B,~~

~~wherein X1-X9 each are an amino acid, wherein A and B are absent or are amino acids or peptides containing up to 6 amino acids, and wherein amino acids X2, X3, X4, and X5 may be the same or different and each optionally may be absent.~~

5. (Original) The peptide according to claim 4, wherein X1 and X9 are cys, and the peptide contains a disulfide bond between the side chains of X1 and X9.

6. (Currently amended) The peptide according to claim 5 wherein:

X2 is selected from the group consisting of pro, ala, val, asp, gln, phe, glu, ser, and ile;

X3 is selected from the group consisting of ile, leu, glu, met, pro, and his;

X4 is selected from the group consisting of glu, asp, his, arg, pro, ala, lys, gln, met, trp, and ser;

X5 is selected from the group consisting of asp, arg, ala, leu, glu, ser, phe, gln, met, and val;

~~X6 is selected from the group consisting of arg, his, gln, phe, ser, and pro;~~

~~X7 is selected from the group consisting of pro, tyr, arg, and trp; and~~

~~X8 is selected from the group consisting of met, ser, leu, and arg.~~

7. (Canceled).
8. (Original) The peptide according to claim 7, wherein X2 is pro; X3 is selected from the group consisting of ile and leu; X4 is selected from the group consisting of glu, asp, and arg; and X5 is selected from the group consisting of asp and glu.
9. (Canceled).
10. (Currently amended) A composition comprising at least two peptides according to ~~claim 9~~ any of claims 1-6 and 8.
11. (Previously presented) A cyclic peptide comprising the sequence cys-pro-ile-glu-asp-arg-pro-met-cys (SEQ ID NO: 1), wherein said peptide comprises a disulfide bond between the cys side chains.
12. (Original) A pharmaceutical preparation comprising a peptide or composition according to claim 1 in a pharmaceutically acceptable sterile vehicle.
13. (Original) A diagnostic composition comprising a peptide or mixture of peptides according to claim 1, wherein said peptide or peptides are conjugated to a detectable label.
14. (Original) A composition according to claim 13, wherein said detectable label is a fluorescent moiety or a radioactive label.
15. (Withdrawn) A method of diagnosing the presence of colon tumor cells in a patient comprising the steps of administering to said patient an effective amount of a diagnostic composition according to claim 13, allowing said diagnostic composition to bind to colon tumor cells, and detecting binding of said composition to said colon tumor cells.
16. (Withdrawn) A method of diagnosing the presence of colon tumor cells in a patient comprising the steps of contacting a sample of colon cells obtained from said patient with a diagnostic composition according to claim 13, and detecting binding of said composition to colon tumor cells.

17. (Withdrawn) The method according to claim 16, wherein said method is non-invasive.
18. (Withdrawn) The method according to claim 17, wherein said sample of colon cells is obtained from fecal material.
19. (Original) A composition comprising one or more peptides according to claim 1, wherein each of said peptides is conjugated to a therapeutic agent.
20. (Original) The composition according to claim 19, wherein said therapeutic agent is a cytotoxic agent.
21. (Withdrawn) A method of treating a patient suffering from colon cancer, comprising administering to said patient a composition according to claim 19.
22. (Withdrawn) A method for treating a patient suffering from a colon-derived cancer, comprising administering to said patient a composition according to claim 19.
23. (Withdrawn) A method for blocking a receptor on a colon tumor cell or a colon tumor-derived cell in a patient containing said colon tumor or said colon tumor-derived cells, comprising the steps of administering to said patient a composition according to claim 19, and allowing the peptide or peptides in said composition to selectively or specifically bind to said receptor.
24. (Withdrawn) A method of identifying a homing molecule that homes to a marker on a colon tumor cell, comprising the steps of contacting in vitro a substantially purified population of a tumor cell line with one or more peptide molecules, and observing the specific or selective binding of a molecule to the tumor cell compared to a non-tumor colon cell, wherein the presence of specific binding identifies the peptide molecule as a homing molecule that homes to said colon tumor cell.
25. (Previously Presented) A purified polypeptide represented by the formula:
A-cys-X1-X2-X3-X4-arg-pro-met-cys-B (SEQ ID NO: 139), wherein X1-X4 each are an amino acid, and wherein A and B are absent or are amino acids or peptides containing up to 6 amino acids.